

WHAT IS CLAIMED IS:

1. A semiconductor apparatus comprising:  
a plurality of input terminals for receiving an  
intermediate-frequency signal;

a variable gain amplifier for amplifying the  
intermediate-frequency signal inputted via said plurality  
of input terminals; and

a quadrature demodulator for subjecting the  
intermediate-frequency signal that has been passed  
through said variable gain amplifier to quadrature  
demodulation for output.

2. A portable terminal apparatus comprising:

a first receiving system for receiving a quadrature  
modulated signal and converting the quadrature modulated  
signal into an intermediate-frequency signal for output;

a second receiving system comprising at least one  
system for receiving a BPSK modulated signal and  
converting the BPSK modulated signal into an  
intermediate-frequency signal for output;

an IF stage for processing both the intermediate-  
frequency signal of said first receiving system and the  
intermediate-frequency signal of said second receiving  
system; and

a signal processing system for processing the

signal of said first receiving system that has been passed through said IF stage and the signal of said second receiving system that has been passed through said IF stage.

3. A portable terminal apparatus as claimed in claim 2, wherein said IF stage has at least one of a variable gain amplifier for amplifying the intermediate-frequency signal of said first receiving system and the intermediate-frequency signal of said second receiving system and a quadrature demodulator for subjecting the intermediate-frequency signals that have been passed through the variable gain amplifier to quadrature demodulation for output.

4. A portable terminal apparatus as claimed in claim 3, wherein when said IF stage has said quadrature demodulator, said signal processing system includes: a phase shifter for making an I signal and a Q signal of said second receiving system obtained by demodulating the intermediate-frequency signal by said quadrature demodulator coincide with each other in phase; an adder for adding the I signal and the Q signal together that have been passed through said phase shifter; and a correlator for demodulating said BPSK modulated signal on the basis of an addition output of said adder.

5. A portable terminal apparatus as claimed in claim 3, wherein when said IF stage has said quadrature demodulator, said signal processing system includes a correlator for demodulating said BPSK modulated signal on the basis of an I signal or a Q signal of said second receiving system obtained by demodulating the intermediate-frequency signal by said quadrature demodulator.

6. A portable terminal apparatus as claimed in claim 3, wherein when said IF stage has said variable gain amplifier and said quadrature demodulator, said portable terminal apparatus includes a control means for fixing gain of said variable gain amplifier at about a maximum gain in demodulating said BPSK modulated signal.

7. A portable terminal apparatus as claimed in claim 3, wherein when said IF stage has said variable gain amplifier and said quadrature demodulator, said portable terminal apparatus includes a control means for controlling gain of said variable gain amplifier to a maximum gain while maintaining linearity on the basis of a demodulated signal obtained by demodulating said BPSK modulated signal.

8. A portable terminal apparatus as claimed in claim 3, wherein when said IF stage has said variable

gain amplifier and said quadrature demodulator, said portable terminal apparatus includes a control means for controlling gain of said variable gain amplifier to about a maximum gain even with nonlinearity on the basis of a demodulated signal obtained by demodulating said BPSK modulated signal.